OF150 OPEN FRAME

USER'S MANUAL

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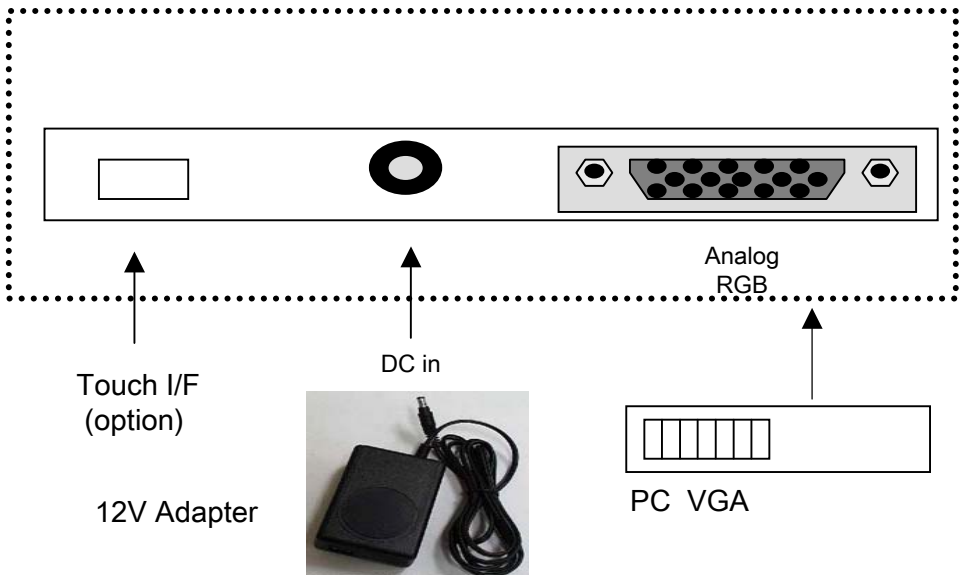
* SAW Touch (Option)

AOD
All In One

0. Connection To the Monitor



1. Installation

- Connect the signal(VGA) cable to the VGA port of computer. Tighten the two thumbscrews by turning clockwise.
- You can adjust the connection for your PC environment.
- Plug the DC cord of the AC adapter to the power connector and the plug the end of AC adapter to and electrical outlet socket(110V/220V)
- Connect DC cord of adapter (12V DC) to the monitor..

2. Features

- OF190SAW is 15” XGA LCD monitor and support up to 75Hz.
- You can adjust brightness, contrast, horizontal & vertical positions by OSD menus and use auto adjust function for instant adjustment.
- High-qualified LCD Controller inside
- Compact space saving design and power saving mode
- 100% compatible with Windows PC environment without the installation of driver CD or software program.

3. Plug and Play Function

OF190SAW can be installed and connected automatically to any computer systems without driver CD or software programs. Monitor will recognize the optimized value of video mode by DDC(Display Data Channel) method that makes the graphic card of computer to communicate with the monitor.

OF190SAW supports VESA DDC 1/2B.

4. Safety Precaution

We strongly recommend that you carefully read this User’s Manual before operating your LCD monitor. FOLLOW INSTRUCTIONS in this manual.
Please read and comprehend all using directives before use this machine.

- **Power**

— Use the type of power indicated on the marking label.

- **Adapter**

— Only use an adapter designed of the LCD monitor.

- **Plug**

— Do not remove any of the prongs of the monitor's three-pronged power plug.
— Disconnect the power plug from the AC outlet if you will not use it for an indefinite period of time.

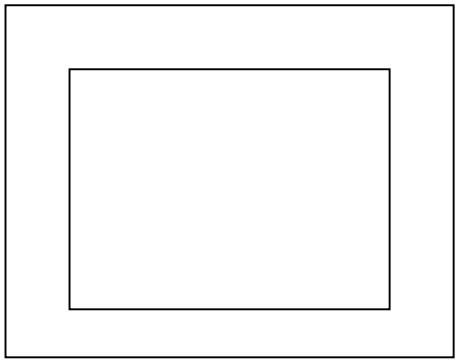
- **Power and extension cord**

— Use the proper power cord with ground conductor
— Do not overload wall outlets or power cords. Ensure that the total of all units plugged into the wall outlet does not exceed 7 amperes.
— Do not allow anything to rest on the power cord. Do not locate this product where persons will walk on the cord.

- **Care and maintenance**

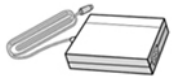
— Slots and openings in the cabinet are provided for ventilation. Do not block or cover these openings.
— Do not push objects of any kind into cabinet slots or openings. The screen surface is easily scratched.
— Do not use paper towels to clean the display. Avoid touching it with your fingers, pens, or pencils.
— Turn off the AC adapter and the monitor over long periods when not in use.

5. Contents Of the Retail Package



Monitor

User's Manual



AC/DC Adaptor

Power Cord

VGA Cable

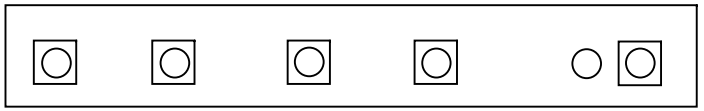
Audio Cable

Touch Driver (Option)

Composite Cable (Option)

S-video Cable (Option)

6. OSD (On-Screen-Menu)



Button	Function	Status
POWER	Power ON or OFF	ON/OFF
LED	Indicate working status	Green : On Flickering Red : Stand-by Red: No signal
UP	Launch OSD Menu or Add Value	Move to OSD Menu
DOWN	Launch OSD Menu or Down value	Move to OSD Menu
SELECT	Select OSD Menu	
MENU	On / Off OSD Menu	

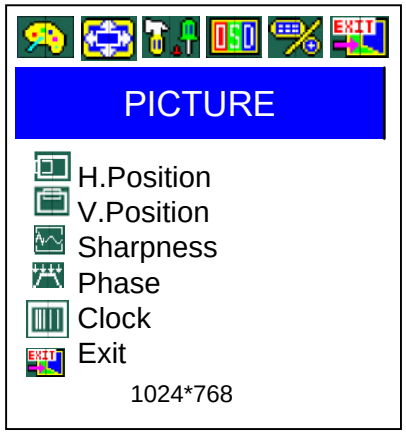
7. OSD Control

1. Color

MENU → Select COLOR → UP / DOWN KEY

1) Adjust Contrast
2) Adjust Brightness
3) Adjust Color
4) Adjust Color Temp
5) Adjust R.G.B value

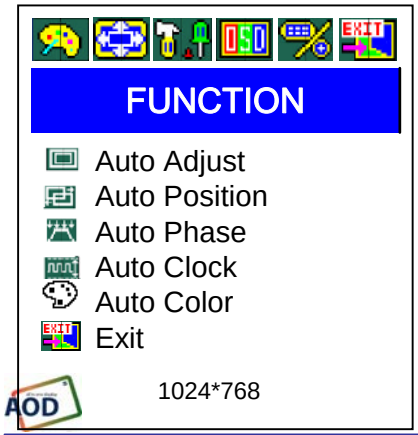
2. PICTURE



MENU → Select PICTURE → UP / DOWN KEY

1) Adjust Horizontal Position
2) Adjust Vertical Position
3) Adjust Sharpness
4) Adjust Phase
5) Optimize Image and eliminate Noise

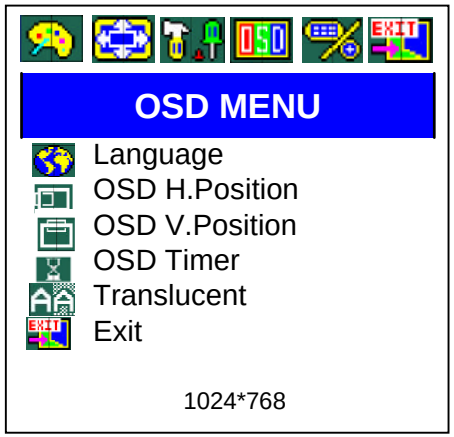
3. FUNCTION



MENU → Select FUNCTION → UP / DOWN KEY

1) Run Auto-Adjust Function for optimization
2) Automatically adjust screen position (17",19" option)
3) utomatically adjust phase (17",19" option)
4) Automatically adjust image and eliminate noise (17",19" option)
5) Automatically adjust color status

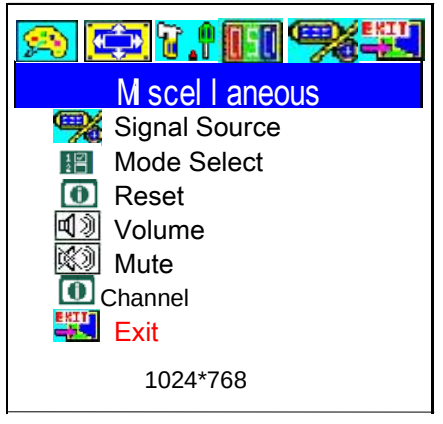
4. OSD MENU



MENU → Select OSD MENU → UP / DOWN KEY

1) Select Language
2) Adjust OSD Horizontal Position
3) Adjust OSD Vertical Position
4) Select OSD Auto Timer
5) Select transparent status of OSD menu

5 MISCELLANEOUS



MENU → Select MISCELLANEOUS → UP / DOWN KEY

1) Select Signal Source
2) Select Mode
3) Go to Factory Setting
4) Volume Up/Down(AV, TV Option)
5) Mute (AV,TV Option)
6) Select Channel (AV,TV Option)
7) Exit

8. Troubleshooting

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER.
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

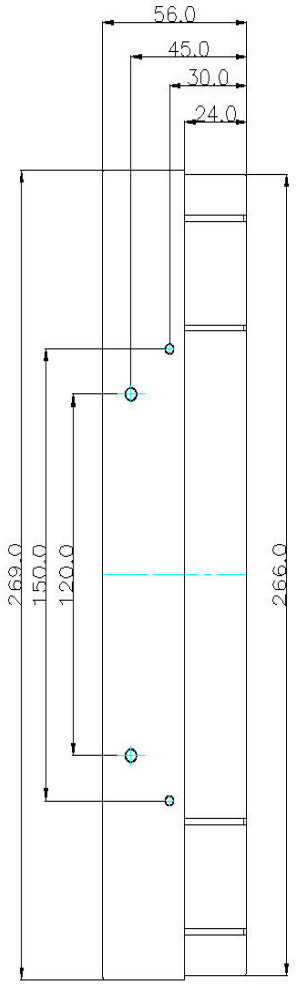
The monitor does not respond after you turn on the system.
Make sure that the monitor is turned on.
Turn off the power and check the monitor's power cord, AC adapter, and signal cable for proper connection.
Appear the " No Input the Signal"
Check the connecting of the audio cable between the monitor and the computer.
Appear the " Input Not the Supported"
Input signal are insuperable, reset the video mode.
The appearance is not at the screen center.
Use "AUTO ADJUST", refer to the Controls section.
The characters on the screen are too dim or too bright
Choose fit color temperature, use "AUTO COLOUR ADJUST or manually adjust "RGB ADJUSTMENT, refer to the Control section.

9. Specifications

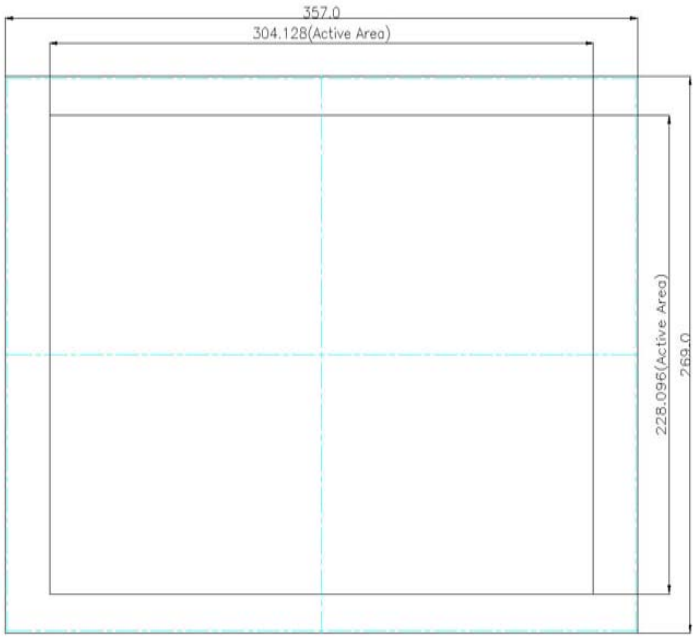
Model	AOD 150
Display	
Type	15" Color Active Matrix TFT LCD
Color	16.2 million colors
Pixel	0.297 x 0.297 mm
Screen Size	15.0 inch
Resolution (Max)	1024 x 768 at 60 to 75Hz
Contrast Ratio	450:1(typical)
Brightness	250cd/m^2
Response Time	16ms(typical)
Video	
Frequency	Horizontal: 56 ~ 75Hz Vertical: 31.5 ~ 80KHz
Input signal	Analog RGB, 15 Pin
Compatibility	
Plug and Play	VESA DDC 1/2B
Compatibility	VESA / IBM / MAC
Power	VESA Standard, DPMS
Operation Environment	
Power Consumption	Operation Mode: 35 watt max. Stand-by: 4 watt max.
Temperature	Operation Mode : 0 ºC ~ 40 ºC Stand-by: -20 ºC ~ 60 ºC
Humidity	Operation Mode: 10% ~ 85% R.H. Stand-by: 90% R.H. Max.
User's Mode	
OSD Key	Menu / Select / Down / Up / Power
Dimension & Weight	
Dimension	357 (W) x 56 (D) x 269 (H) mm
Weight	4.1 kg (gross+VESA ARM WO TOUCH,WO PG)

AOD All In One

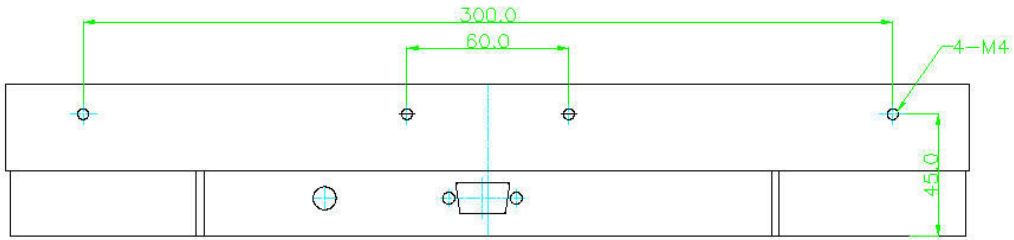
10. Drawing



Side view



Front view



Bottom view

Specification of (OPTION)
5 Wire Analog Resistive Touch Panel

A. Application

This specification applies to the **5 Wire Analog Resistive Touch Panel**.

B. Environmental Conditions

1. **Operating Temperature Range**
   -20°C ~ 70°C
2. **Operating Humidity Range**
   5% ~ 96% RH (no dew falls)
3. **Storage Temperature Range**
   -25°C ~ 80°C
4. **Storage Humidity Range**
   5% ~ 96% RH (no dew falls)
5. **Water Spray**
   Not damaged by running water applied to the active area.
6. **Vibration**
   Withstand 0.01 inches peak to peak excursion, at a frequency of 5 to 455 Hz, for a period of 15 minutes in each of three axes.
7. **Chemical Resistance**
   The touch panel active area of the touchscreen is resistant to the following chemicals when exposed for a period of one hour at a temperature of 21°C:
   - Acetone
   - Ammonia-based glass cleaners
   - Common foods and beverages
   - Hexane
   - Isopropyl alcohol
   - Methylene chloride
   - Methyl ethyl ketone
   - Mineral spirits
   - Turpentine

C. Electrical Characteristics

1. **Supply Voltage**
   +5VDC, nominal.
2. **Lead to Lead Resistance**
   40Ω ~ 100Ω (between X – Y)
   50Ω ~ 110Ω (between X – LX)
   50Ω ~ 110Ω (between Y – LY)
   40Ω ~ 100Ω (between LX – LY)
3. **Contact Bounce**
   Less than 10 ms (input by finger).
4. **Electrostatic Discharge Protection**
   Withstands 20 discharges of 15kV, distributed randomly across the active area with proper transient protection.
   (per EN 61000-4-2, 1995)

D. Mechanical Characteristics

1. **Activation force**
   Less than 40gr.
   Using by the silicone finger, hardness = 60°of diameter 16mm.
2. **Input Methods**
   Finger, glove hand, pen or stylus.
3. **Surface Hardness**
   Meets pencil hardness 3H (per ASTM D3363).
4. **Position Accuracy (Linearity)**
   Less than 1%.
5. **Resolution**
   Based on controller resolution of 4096 x 4096.
6. **Cable**
   • Type: F.C.C. (flat conductor cable)
   • Standard length: 300mm
   • Connecting area with touch panel
   The tensile force: vertical to touch panel — 2.0 kg
   straight to touch panel —1.0 kg
   Connecting type: 5 points soldering adding UV glue
   Cable fold : 10 times in 1R, 180 degrees
   Detail specification: ETC test, No.: ET-88T-12-102-C00
7. **Connector**
   Five-position, 0.025 inch (0.635mm) square post receptacle with 2.54mm centers.
   The times of insertions and withdrawals : at least 100 times.

E. Reliability

The following characteristics are generated by evaluating test samples after 2 hours leaving in the room condition when each of the reliability tests finishes.

Test Item	Result	Remark
Storage Temperature-high	80°C for 240hours	At ambient humidity
Storage Temperature-low	-25°C for 240hours	
Thermal Shock	-20°C (1hr.) ~ 70°C (1hr.) 10cycles	
High Temp./Humidity Test	60°C/90%RH : 240hours	
Operating Life 1 : Hitting Key Test (*1)	250g , 2 activations / sec. More than 35,000,000 times	By using Silicone finger (*2)
Operating Life 2 : Writing Test (*1)	250g , 4.5mm / sec. More than 1,000,000 times	By using polyester finger (*3)

*1 Without supplying Volts.
*2 Positions of hitting key are between the dots by Silicon finger (hardness 60° silicon rubber) of diameter 16mm.
*3 Writing test is made by polyester stylus pen with tip radius.

AOD All In One

F. Optical Performance

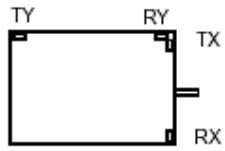
Light Transmission 75~ 85% (typical value) (per ASTM D1003)

C. Electrical Characteristics

1. **Supply Voltage**
   +5VDC
2. **Electrostatic Protection**
   Per EN 61000-4-2, 1995 : Meets Level 4
   (15 kV air / 8 kV contact discharges).
3. **Resolution**
   Based on controller resolution of 4096 x 4096.

D. Mechanical Characteristics

1. **Construction**
   There are four transducers attached to the beveled edge of the glass.
   1×TY on left side upper corner
   1×RY on right side upper corner
   1×TX on right side upper corner
   1×RX on right side down corner
   (Based on the cable exiting from the right side)



2. **Cable and Connector**
   Cable typically exits from the right side, with a 2 x 6, 0.635 mm square post receptacle.
3. **Touch Activation Force**
   Less than 85 grams.
4. **Positional Accuracy**
   Standard deviation of error is less than ±1%.
5. **Life Performance**
   More than 50 million touches in one location.
   (Tested by a stylus similar as finger).
6. **Input Medium**
   Finger or gloved hand (rubber, cloth or leather).
7. **Surface Durability**
   Optical glass surface, Mohs' hardness rating : 7.

For Tempered SAW only

1. **Construction**
   Pure 6mm-thickness heat strengthened glass with transducers attached to the beveled edge of the glass.

2. **Break Resistance**
   Meets UL-1950 Steel Ball Drop Test
   A 1-pound steel ball drops from height of 130 cm onto the center of the glass without breaking.

For Protected SAW only

1. **Construction**
   Pure 6mm-thickness heat strengthened glass with transducers attached on the edge of the glass surface.
   The reflectors and transducers are sealed inside the ABS plastic frame.

2. **Break Resistance**
   Meets UL-1950 Steel Ball Drop Test

3. **Dustproof**
   The ABS plastic frame around the panel prevents dust and dirt from accumulating on the reflectors and transducers.

4. **Waterproof**
   Special glue is applied to the gap between the ABS plastic frame and glass substrate to prevent water infiltration.
   Test Method : Set the touchscreen horizontally, and pour water on the panel surface without overflow over the ABS plastic frame. The panel surface is soaked in water for 1 hour. The panel is in normal condition after water poured out and dried.

E. Optical Performance

Light Transmission 90% (per ASTM D1003)

SURFACE ACOUSTIC WAVE TOUCH PANEL

F. Glass Substrate Quality

1. **Circular Defects**

Description	Length {mm}	Comments {mm}
Glass defects spots, stains, etch defects, surface chips	>0.51	None allowed
	≧0.38, ≦0.51	2 per 50.8 diameter circle
	<0.38	Accumulated length must be less than 1.27 in a 50.8 diameter circle
	When evaluating defects with distortion include the entire distorted area when measuring.	

2. **Linear Defects**

Description	Width {mm}	Comments {mm}
Glass scratch	>0.102	None allowed
	0.102	12.7max length w/ minimum separation of 6.35
	0.076	25.4 max length w/ minimum separation of 3.81
	0.051	38.1 max length w/ minimum separation of 1.27
	< 0.051	Disregard

3. **Edge Chips**

Description	Comments {mm}
Four edges excluding four corners	1.27 W × 1.27 L × 1/3 glass thickness
Four corners	2.54 W × 5.08 L × 1/2 glass thickness